IN THE ABSTRACT:

Please delete the abstract in its entirety and replace it with the revised abstract attached hereto on a separate sheet.

IN THE SPECIFICATION:

Please amend the specification as follows:

Replace the paragraph beginning at column 1, line 5 with the following:

This is a continuation in part application of Ser. No. 08/896,239 filed on Jul. 17, 1997, now abandoned, which is a continuation in part of Ser. No. 08/716,511 filed on Sep. 20, 1996, now [ABN] abandoned. In addition, this is a reissue of U. S. Patent No. 6,379,497, issued April 30, 2002, which is incorporated herein by reference in its entirety.

Replace the paragraph beginning at column 1, line 12 with the following:

Cellulosic paperboard must reconcile several conflicting properties to be useful for the manufacture of plates, cups, bowls, canisters, French fry sleeves, hamburger clam shells, rectangular take-out containers, and related articles of manufacture. The paperboard has to have good thermal resistance, improved formability, and, to be economical, reduced board weight, or, for premium applications, increased container rigidity. The fiber weight (hereinafter "w") of the paperboard should be at least about forty pounds for each three thousand square foot ream. Fiber weight is the weight of fiber in pounds for each three thousand square foot ream. The fiber weight is measured

at standard TAPPI conditions which provide that the measurements take place at a fifty percent relative humidity at seventy degrees Fahrenheit. In general, the fiber weight of a 3000 square foot ream is equal to the basis weight of such a ream minus the weight of any coating and/or size press. The fiber mat density of the paperboard of this invention is in the range of about 3 to 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. The preferred fiber mat density is in the range of about 4.5 to 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. To achieve the superior properties of our novel cellulosic paperboard, it has been discovered that the board, at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, should have a GM Taber stiffness of at least [0.00716 $w^{2.63}$] 0.00501$w^{2.63}$ grams-centimeters/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of at least about [1890+24.2 w] 1323+24.2w pounds per inch. The preferred GM Taber stiffness value for paperboards having the fiber mat density given above is [0.00501 $w^{2.63}$] 0.00716$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and the GM tensile stiffness is [1323+24.2 w] 1890+24.2w pounds per inch. The high GM Taber stiffness values listed are desired to facilitate the bending of the paperboard into the aforementioned articles of manufacture and to provide these articles with greater rigidity. Likewise the high GM Taber and GM tensile stiffness prevents the plates, cups, and other articles of manufacture from collapsing when used by the consumer. The articles of manufacture can suitably be prepared from either one-ply or multi-ply paperboard as disclosed herein. The present invention provides one-ply and multi-ply

paperboard comprising (a) predominantly cellulosic fibers, (b) bulk and porosity enhancing additive interspersed with the cellulosic fibers in a controlled distribution throughout the thickness of the paperboard, and (c) size press applied binder coating optionally including a pigment adjacent both surfaces of the paperboard and penetrating into the board to a controlled extent. The amount of size press applied is at least one pound for each three thousand square foot ream of paperboard having a fiber mat density of about 3 to below 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. For boards having a fiber mat density of 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch or a greater density, the amount of size press applied should be at least six pounds for each three thousand square foot ream. The overall fiber weight of the paperboard is at least 40 lbs. per 3000 square foot ream, suitably 60 to 320 lbs. per 3000 square foot ream, preferably 70 to 240 lbs. per 3000 square foot ream, most preferably 80 to 220 lbs. per 3000 square foot ream, and the distribution of the bulk and porosity enhancing additive is controlled so that at least twenty percent of the additive is distributed in the central layer and not more than 75 percent of the additive is distributed on the periphery of the paperboard with no periphery having more than twice the percent of the additive distributed in the central layer of the paperboard. The penetration of the size press applied binder and [optionally] optional pigment coating into board is controlled to produce a cellulosic fiber board web having, at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, a GM Taber stiffness respectively of at least [0.00716 $w^{2.63}$] 0.00501$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch],

and GM tensile stiffness of about [1890+24.2 w] 1323+24.2w pounds per inch. The preferred GM Taber stiffness for the paperboard of this invention having a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch is [$0.00501\ w^{2.63}$] $0.00716w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and the preferred GM tensile stiffness is [1323+24.2 w] 1890+24.2w pounds per inch. The GM tensile and GM Taber values for the web and one-ply board are the same. For multi-ply board the overall paperboard GM Taber stiffness and GM tensile stiffness are the same as for a one-ply paperboard. The aforementioned combination of GM Taber stiffness and GM tensile stiffness provides a paperboard which can readily be converted to useful high quality cups, plates, compartmented plates, bowls, canisters, French fry sleeves, hamburger clam shells, rectangular take-out containers, food buckets, and other consumer products and useful articles of manufacture including cartons and folding paper boxes. This paperboard is also particularly suitable for the manufacture of heat insulating paperboard containers having on their wall surfaces a foamed layer of a thermoplastic film such as a polyethylene.

Replace the paragraph beginning at column 4, line 13 with the following:

Accordingly, there is a need for an improved, bulk-enhanced paperboard which retains a higher percentage of added bulk enhancers in the center layer of the board than has heretofore been achieved. There is a need for a cellulosic paperboard which, at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, has a GM Taber stiffness of at least about [0.00716

$w^{2.63}$] 0.00501$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of [1890+24.2 w] 1323+24.2w pounds per inch. The preferred GM Taber stiffness for the paperboard of this invention having a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch is [0.00501 $w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch] 0.00716$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$, and the preferred GM tensile stiffness is [1323+24.2 w] 1890+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, GM Taber stiffness is, respectively, [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00023 $w^{2.63}$] 0.00023$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch]; the GM Taber stiffness is [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values for a fiber mat density of 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch are, respectively, 0.00084$w^{2.63}$ grams-centimeter, [0.0084 $w^{2.63}$

grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 w$^{2.63}$] 0.00043w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 w$^{2.63}$] 0.00024w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 w$^{2.63}$] 0.00021w$^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00016 w$^{2.63}$] 0.00016w$^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile value of [1323+24.2 w] 1323+24.2w pounds per inch. At a paperboard fiber mat density of 3, 4.5, 6.5, and 7 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, the GM Taber stiffness values are, respectively, as follows: [0.00120 w$^{2.63}$] 0.00120w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 w$^{2.63}$] 0.00062w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 w$^{2.63}$] 0.00034w$^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00030 w$^{2.63}$] 0.00030w$^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness or 0.001 inch], and the GM tensile stiffness is [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values for the foregoing fiber mat densities are, respectively, [0.0084 w$^{2.63}$] 0.00084 w$^{2.63}$ grams-

centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 w$^{2.63}$] 0.00043w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 w$^{2.63}$] 0.00024w$^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00021 w$^{2.63}$] 0.00021w$^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at the preferred GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch.

Replace the paragraph beginning at column 5, line 37 with the following:

This is accomplished in one embodiment of the invention by providing a cellulosic paperboard web comprising predominantly cellulosic fibers; bulk and porosity enhancing additive interspersed with said cellulosic fibers in a controlled distribution throughout the thickness of the paperboard; and size press applied binder[,] optionally including a pigment coating adjacent both surfaces of the paperboard web and penetrating into the paperboard web to a controlled extent. The overall fiber weight "w" of the web [being] is at least 40 lbs. per 3000 square foot ream for less stringent requirements such as French fry sleeves. For other applications, the suitable range is 60 to 320 lbs. per 3000 square foot ream, advantageously 70 to 320 lbs. per 3000 square foot ream, and preferably 80 to 220 lbs. per 3000 square foot ream. Both the distribution of the bulk and porosity enhancing additive throughout the thickness of the paperboard and the penetration of the size press applied binder and [optionally] optional pigment coating

into the board [being] are controlled to simultaneously produce, at a fiber density of 3,

4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of

0.001 inch, a GM Taber stiffness respectively of at least about [0.00716 $w^{2.63}$]

0.00501$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream

at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of [1890+24.2 w]

1323+24.2w pounds per inch. The preferred GM Taber stiffness is [0.00501 $w^{2.63}$]

0.00716$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream

at a fiberboard thickness of 0.001 inch, and the preferred GM tensile stiffness is

[1323+24.2 w] 1890+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, 7, and

8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, GM

Taber stiffness is values are, respectively, [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-

centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at

a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter,

[grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter,

[grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch, 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter, and

[grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch, and 0.00023 $w^{2.63}$] 0.00023$w^{2.63}$ grams-centimeter

[grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w]

1890+24.2w pounds per inch. The preferred GM Taber stiffness values for a board

having a fiber mat density of about 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot

ream at a fiberboard thickness of 0.001 inch are, respectively, [0.0084 $w^{2.63}$] 0.00084 $w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$] 0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.0001 inch, 0.00024 $w^{2.63}$] 0.00024$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 $w^{2.63}$] 0.00021$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00016 $w^{2.63}$] 0.00016$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, and 7 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, the GM Taber stiffness values are, respectively, [0.00120 w] 0.00120$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.0034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values are, respectively, [0.0084

$w^{2.63}$] 0.00084$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$] 0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$] 0.00024$w^{2.63}$ grams-centimeter, [grams-centimeterfiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 $w^{2.63}$] 0.00021$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch.

Replace the paragraph beginning at column 7, line 44 with the following:

Advantageously, the bulk enhanced paperboard is conveniently pressed into high quality articles of manufacture having a high GM Taber stiffness and GM tensile stiffness. Useful articles made from the bulk enhanced paperboard include cartons, folding paper boxes, cups, plates, compartmented plates, bowls, canisters, French fry sleeves, hamburger clam shells, rectangular take-out containers, food buckets, heat insulating containers coated or laminated with a polyolefin and foamed with the water contained in the fiberboard, and food containers with a microwave susceptor layer. The articles of manufacture are characterized by having excellent insulation properties. These properties are critical for hot and cold cups and plates of this invention. The GM Taber stiffness and GM tensile stiffness for the one-ply web is the same as for the one-ply paperboard. For multi-ply boards, the GM Taber stiffness and GM tensile stiffness is the same as for the one-ply paperboard. The paperboard of this invention has, at a

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fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, a GM Taber stiffness of at least about [0.00716 $w^{2.63}$] 0.00501$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile <u>stiffness</u> of [1890+24.2 w] 1323+24.2w pounds per inch. The preferred GM Taber stiffness at a fiber mat density of 3-9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch is [0.00501 $w^{2.63}$] 0.00716$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and the preferred GM tensile stiffness is [1323+24.2 w] 1890+24.2w pounds per inch. The GM Taber stiffness values for a paperboard having a fiber mat density of 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, are<u>, respectively,</u> [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00023 $w^{2.63}$] 0.00023$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values for a board having a fiber mat density of about 3, 4.5, 6.5, 7, and 8.3 pounds per 3000

square foot ream at a fiberboard thickness of 0.001 inch are, respectively, [0.0084 $w^{2.63}$] 0.00084$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 w] 0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$] 0.00024$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 $w^{2.63}$] 0.00021$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00016 $w^{2.63}$] 0.00016$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, and 7 pounds per 3000 square foot ream at a fiberboard thickness of 0001 inch, the GM Taber stiffness values are, respectively, [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values are, respectively, [0.0084 $w^{2.63}$]

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0.00084w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 w$^{2.63}$]

0.00043w$^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 w$^{2.63}$]

0.00024w$^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00021 w$^{2.63}$]

0.00021w$^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch.

Replace the paragraph beginning at column 20, line 3 with the following:

The paperboard sheet which is used to form the heat insulating paper container has a fiber weight of at least 40, preferably 60 to 320, pounds per 3000 square foot ream. The cellulosic paperboard useful for the manufacture of the composite containers, including the cup shown in FIG. 28, has, at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, a GM Taber stiffness respectively of at least [0.00716 w$^{2.63}$] 0.00501w$^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of [1890+24.2 w] 1323+24.2w pounds per inch. The preferred GM Taber stiffness value is [0.00501 w$^{2.63}$] 0.00716w$^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and the preferred GM tensile stiffness is [1323+24.2 w] 1890+24.2w pounds per inch. The GM Taber stiffness values for a

paperboard having a fiber mat density of 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, are, respectively, [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00023 $w^{2.63}$] 0.00023$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values for a board having a fiber mat density of about 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch are, respectively, [0.0084 $w^{2.63}$] 0.00084$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$] 0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$] 0.00024$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 $w^{2.63}$] 0.00021$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density1.63 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00016 $w^{2.63}$]

$0.00016w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, and 7 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, the GM Taber stiffness values are, respectively, [0.00120 $w^{2.63}$] $0.00120w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] $0.00062w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] $0.00034w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00030 $w^{2.63}$] $0.00030w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values are, respectively, [0.0084 $w^{2.63}$] $0.00084w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$] $0.00043w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$] $0.00024w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00021 $w^{2.63}$] $0.00021w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch. Utilizing the paperboard of this

invention improves the thermal properties of the container disclosed in U.S. Pat. No.

4,435,344, which is incorporated by reference herein in its entirety. FIG. 28 illustrates

the heat insulating paperboard container in the form of a cup. This cup has an inner

and outer surface which when filled with a liquid at 190° F. exhibits thermal insulative

properties such that at room temperature and one atmosphere pressure, the

temperature of the outer surface does not reach 140°F-145°F. in less than thirty

seconds. The article by B.I. Dussan et al. entitled *Study of Burn Hazard in Human*

Tissue and Its Implication on Consumer Product Design, presented at the Heat Transfer

Division of the American Society of Mechanical Engineers at the ASME Winter Annual

Meeting, Washington, D.C., Nov. 28-Dec. 2, 1971, discusses skin necrosis and thermal

insulation.

Replace the paragraph beginning at column 30, line 1 with the following:

After a suitable amount of drying, the paper web passes through a nip where it is

size-pressed as shown in FIG. 1 (65). A suitable size-press starch is applied. The size-

press starch has solids which have been increased from the more typical 9.8% to

between 20% and 40% and, preferably, to about 33%. The increased weight of the

size-press starch combined with the decrease in fiber density caused by the expansion

of the microspheres generate unexpected and significant improvements in the resulting

bulk-enhanced paperboard. For instance, because the expanded microspheres

increase the "openness" of the resulting paperboard, there is increased penetration of

the size-press solids which allows for a greater amount of size-press starch to be

retained within the paperboard, and, in turn, which generates thicker size-press layers

having higher moduli of elasticity. The higher moduli and thicker size-press layers, in turn, improve bending and GM tensile stiffness. Improved bending and GM tensile and GM <u>Taber</u> stiffness mean a desired rigidity or stiffness of paperboard may be obtained with a reduced fiber weight of papermaking fibers and other materials. The ability to reduce fiber weight while maintaining a desired rigidity, in turn, reduces material costs and improves productivity. The paperboards of this invention have, at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, a GM Taber stiffness of at least about $[0.00716 \, w^{2.63}]$ <u>$0.00501 w^{2.63}$</u> grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile <u>stiffness</u> of $[1890+24.2 \, w]$ <u>$1323+24.2w$</u> pounds per inch. The preferred GM Taber stiffness is $[0.00501 \, w^{2.63}]$ <u>$0.00716w^{2.63}$</u> grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and the preferred GM tensile stiffness is $[1323+24.2 \, w]$ <u>$1890+24.2w$</u> pounds per inch. The GM Taber stiffness values for a paperboard having a fiber mat density of 3, 4.5, 6.5, 7, and 8.3 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch are<u>, respectively,</u> $[0.00120 \, w^{2.63}]$ <u>$0.00120w^{2.63}$ grams-centimeter,</u> [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, $0.00062 \, w^{2.63}]$ <u>$0.00062w^{2.63}$ grams-centimeter,</u> [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, $0.00034 \, w^{2.63}]$ <u>$0.00034w^{2.63}$ grams-centimeter,</u> [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, $0.00030 \, w^{2.63}]$ <u>$0.00030w^{2.63}$ grams-centimeter, and</u> [grams-centimeter/fiber mat density$^{1.63}$ pounds per

3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00023 $w^{2.63}$]

0.00023$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000

square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of

[1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values

for a board having a fiber mat density of about 3, 4.5, 6.5, 7, and 8.3 pounds per 3000

square foot ream at a fiberboard thickness of 0.001 inch, respectively, are [0.0084 $w^{2.63}$]

0.00084$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per

3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$]

0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per

3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$]

0.00024$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per

3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00021 $w^{2.63}$]

0.00021$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per

3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00016 $w^{2.63}$]

0.00016$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000

square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of

[1323+24.2 w] 1323+24.2w pounds per inch. At a fiber mat density of 3, 4.5, 6.5, and 7

pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, the GM

Taber stiffness values are, respectively, [0.00120 $w^{2.63}$] 0.00120$w^{2.63}$ grams-centimeter,

grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch, 0.00062 $w^{2.63}$] 0.00062$w^{2.63}$ grams-centimeter,

]grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a

fiberboard thickness of 0.001 inch, 0.00034 $w^{2.63}$] 0.00034$w^{2.63}$ grams-centimeter, and

[grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00030 $w^{2.63}$] 0.00030$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch. The preferred GM Taber stiffness values are, respectively, [0.0084 $w^{2.63}$] 0.00084$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00043 $w^{2.63}$] 0.00043$w^{2.63}$ grams-centimeter, [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, 0.00024 $w^{2.63}$] 0.00024$w^{2.63}$ grams-centimeter, and [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and 0.00021 $w^{2.63}$] 0.00021$w^{2.63}$ grams-centimeter [grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], at a GM tensile stiffness of [1323+24.2 w] 1323+24.2w pounds per inch. These values are achieved by controlling the dispersion of bulk and porosity additives throughout the thickness of the paperboard and controlling the extent of penetration of the size press applied binder and [optionally] optional pigment. The overall fiber weight of the paperboard is controlled to be at least 40 lbs./3000 square foot ream. This value is usually in the range of 60 to 320 lbs./3000 square foot ream, preferably 80 to 220 lbs./3000 square foot ream. The paperboard web is calendered by suitable apparatus, as shown in FIG. 1 (68), known in the art to achieve the smoothness appropriate for the requirements of the grade of paperboard for the selected application. The resulting paperboard web may then be further processed and shaped by suitable apparatus, such as is shown in

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FIG. 2 (75), to form appropriate paper containers such as cartons, folding paper boxes, high quality, cups, FIGS. 23 and 24; plates, FIG. 16; compartmented plates, FIG. 17; bowls, FIG. 18; canisters, FIG. 19; French fry sleeves, FIG. 20; hamburger clam shells, FIG. 21; rectangular take-out containers, FIG. 22; food buckets, FIG. 25; and other consumer products.

Replace the paragraph beginning at column 35, line 24 with the following:

GM tensile stiffness and GM Taber stiffness are measured according to the following procedures. Taber stiffness is defined by the following equation:

[TENSILE STIFFNESS=YOUNG×MODULUS×CALIPER]

TENSILE STIFFNESS = YOUNG'S MODULUS × CALIPER

where

YOUNG'S MODULUS= $\Delta\sigma/\Delta\varepsilon$

Young's Modulus is defined as the change in specimen stress per unit change in strain. The stress-strain relationship is expressed as the slope of the initial linear portion of the curve where stress is the y-axis and strain is the x-axis. Caliper is the thickness of a single sheet of the paperboard, expressed in inches, and is measured using TAPPI Test Method T411 om 89.

Replace the paragraph beginning at column 39, line 42 with the following:

When the paper was formed into a paper cup, as in this example, the above-described improvements in tensile and bending stiffness improved paper cup rigidity and formability which in turn allowed for a significant reduction in fiber weight of the cup

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for a desired rigidity. The cup is set forth in FIGS. 23 and 24 and the fiberboard at a fiber mat density of 3, 4.5, 6.5, 7, 8.3, and 9 pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, had a GM Taber stiffness of at least [0.00716 $w^{2.63}$] 0.00716$w^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ [pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch], and a GM tensile stiffness of [1890+24.2 w] 1890+24.2w pounds per inch.

SUPPORT FOR AMENDMENTS TO THE SPECIFICATION

The amendments to the specification serve to correct errors and are fully supported by the original specification. Several of the amendments to the specification correct mere typographical errors. Those corrections of particular note are as follows.

First, in all cases where the value "w" serves as a multiplier for a number, the space was deleted between the number and the value "w" to indicate multiplication of the number with the value "w." Applicants note this is the standard method of mathematical notation for the multiplication of a number and a value represented by a letter. Applicants further submit that the application as originally filed, and from which the '497 patent issued, contained no spaces between a number and the value "w" when multiplication was intended. As a result, no new matter was added by this amendment.

Second, the recited GM Taber stiffness multiplier value of $0.0084w^{2.63}$ was revised to $0.00084w^{2.63}$. This value was originally misstated both in the specification and the claims. The recited stiffness value was provided merely to define a point on a curve illustrating the relationship between GM Taber stiffness and a particular fiber mat density and weight of the paperboard. The curve is illustrated in at least FIG. 33. Accordingly, no new matter was added by this amendment.

Third, the GM Taber stiffness multiplier values for defining particular points on the curve illustrating the relationship between GM Taber stiffness and particular fiber densities and weight of the paperboard, as found in the specification, and as well in claims 3-4 and 36-37, were recited as "grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch." This is not the appropriate unit as each multiplier value is configured for a particular fiber density in

pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch and, thus, it is not appropriate to divide by fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. As such, the specification was amended to recite these values as "grams-centimeters." No changes were made for those multiplier values that define the entire curve for a particular fiber mat density. No new matter was added by this amendment.

Fourth, amendments have been made to the specification to present the invention in a more logical manner. In particular, the original presentation of the GM tensile and Taber stiffness values may cause confusion as the narrower description of the invention (i.e., GM Taber stiffness of 0.00501w$^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ and GM tensile stiffness of 1323+24.2w pounds per inch) is described first and the broader description (i.e., GM Taber stiffness of 0.00716w$^{2.63}$ grams-centimeter/fiber mat density$^{1.63}$ and GM tensile stiffness of 1890+24.2w pounds per inch) is described later. To avoid confusion, the discussion of these embodiments has been reversed. No new matter was added by this amendment.

SUPPORT FOR AMENDMENTS TO THE CLAIMS

Claims 1-69 of the '497 patent are directed to a cellulosic multi-ply paperboard. Each of these claims has been examined by the U.S.P.T.O. and are fully supported by the disclosure of the specification. The amendments to claims 1-4, 16, and 35-37 serve to correct errors in the values given and to correct typographical errors.

The GM Taber and tensile stiffness values recited in claim 2, which depends from claim 1, and claim 35, which depends from claim 34, which in turn depends from

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claim 1, do not fall within the range of values recited in claim 1. That is, claims 2 and 35, as issued in the '497 patent, do not appropriately depend from claim 1. In fact, the values recited in claims 2 and 35 are broader than those in claim 1. As such, claim 1 was amended to recite the values originally presented in claims 2 and 35, and claims 2 and 35 were amended to recite the values originally presented in claim 1. Support for this amendment may be found in the specification at column 4, lines 16-29. In addition, claims 34 and 36-37 have been amended to correct their dependencies, necessitated by the amendments described above.

Claims 1-4, 16, and 35-37 have also been amended to correct typographical errors. First, in claims 1-4 and 35-37, in all cases where the value "w" serves as a multiplier for a number, the space was deleted between the number and the value "w." Applicants reference the above remarks for the explanation of this amendment and its support in the specification.

Second, in claims 3-4 and 36-37, the recited GM Taber stiffness multiplier value of $0.0084w^{2.63}$ was revised to $0.00084w^{2.63}$. Applicants reference the above remarks for the explanation of this amendment and its support in the specification.

Third, in claims 3-4 and 36-37, the GM Taber stiffness multiplier values for defining particular points on the curve illustrating the relationship between GM Taber stiffness and particular fiber densities and weight of the paperboard were recited as "grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch." This is not the appropriate unit as each multiplier value is configured for a particular fiber density in pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch and, thus, it is not appropriate to divide by fiber mat

density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. As a result, the units in claims 3-4 and 36-37 were changed to grams-centimeters. Support for this amendment can be found in the arguments presented above and the revisions to the specification presented herewith for the paragraph beginning at column 4, line 13.

Fourth, in claims 1-2 and 35, the GM Taber stiffness multiplier values were recited with units "grams-centimeter/fiber mat density$^{1.63}$ pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch." This is not the appropriate unit as each multiplier value is already configured in pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch, and thus it is not appropriate to further quantify the multiplier values in pounds per 3000 square foot ream at a fiberboard thickness of 0.001 inch. As a result, the units in claims 1-2 and 35 were changed to grams-centimeter/fiber mat density$^{1.63}$. Support for this amendment can be found in the arguments presented above and the revisions to the specification presented herewith for the paragraph beginning at column 4, line 13.

Fifth, in claim 1, the word "to" was added to correct its omission as an obvious typographical error. Support for this amendment can be found in the revisions to the specification presented herewith for the paragraph beginning at column 1, line 12.

Sixth and finally, in claim 16, the verb "comprise" was changed to "comprises" so that it is conjugated to meet the singular subject of the sentence. Support for the correct of this obvious typographical error can be found in the paragraph beginning at column 6, line 50.

SUPPORT FOR AMENDMENTS TO THE DRAWINGS

The amendments to Figs. 12-15 correct an error in the legend for the label corresponding to the line points. Applicants have provided herewith replacement drawings. In support of this amendment, applicants submit that the drawings as originally filed for the '497 patent did not contain this error and the error was introduced by the draftsman when formal drawings were prepared.

CONCLUSION

By this preliminary amendment, Applicants have corrected errors in the specification, as well as in claims 1-4 and 35-37 of the original '497 patent. Claims 1-69 are pending. Applicants await an action on the merits, and timely allowance of the pending claims.

If there is any fee due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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Dated: September 15, 2003   By:_____

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